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DPP and the Adoption of GS1 Standards for Identification

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- About GS1
- The Digital Product Passport (DPP) and Revised Construction Products Regulation (CPR)
- Requirements of the DPP
- ISO Standards and BIM Processes
- Role of the Ecodesign for Sustainable Products Regulation (ESPR) as 'safety net'
- How GS1 Standards meet the requirements of the regulations

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Investigate how GS1 standards can be used to meet the requirements of the Digital Product Passport (DPP) for construction products.

The paper is based on the proposed EU legislation, including the Ecodesign for Sustainable Products Regulation (ESPR) and Construction Products Regulation (CPR)

The formal adoption of these regulations is expected in Q2 of 2024

CitA BIM Gathering, September 20th, 2023

Digital Product Passport and the adoption
of GS1 standards for identification

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Abstract

Under the framework of the EU Green Deal, setting the objective of becoming the first climate-neutral region by 2050, the European Union (EU) adopted the Construction Products Regulation (CPR) proposal on 30th March 2022. The proposed regulation includes the EU Digital Product Passport (DPP), a new concept. In addition, the proposed regulation sets mandatory green public procurement criteria. The overall aim of the proposal is to reduce the life cycle environmental impact of products through efficient digital solutions and also to enable the objectives of EU industrial policy such as boosting the demand for sustainable goods and supporting sustainable production. From 2026 on, companies will be obliged to identify their products and supply chain events in order to be compliant with the new requirements. But how can CO_2 emissions be calculated, and supply chain events regarding finished products be recorded and disclosed, if products are not correctly identified? The aim of this paper is to investigate how GS1 standards can be applied to construction products in order to meet the DPP requirements for globally unique, interoperable and non-proprietary methods of product identification. As the DPP for construction products is a new concept, the methodology of research for this paper is the problem-solving approach (action research) based on a desk study. It analyses the requirements of the DPP and investigates how GS1 Standards can address them.

Keywords − ESPR, ISO 19650, Interoperable Identification, DPP, CPR, GS1.

I INTRODUCTION

GS1 is a neutral, not-for-profit, global collaborative standards organisation that brings together industry leaders, government, regulators, academia, and industry associations to develop standards-based solutions to address the challenges of data exchange. Its scale and reach - local member organisations in 116 countries, over two million member companies and over 6 billion transaction every day - helps ensure that there is a common language of business used globally [1] across 25 sectors, including consumer packaged goods, transport and logistics, healthcare, construction, and DIY [2] .

GS1's open standards are based on ISO standards. They create a common foundation for business to uniquely identify, accurately capture and automatically share information about products, locations and more [3]. Businesses can also combine different GS1 standards to streamline processes - such as interoperability and traceability systems for supply chains [4]. GS1 provides a common set of standards to share sustainability information widely, both for Business-to-Business (B2B) and Business-to-Customer (B2C) purposes.

The aim of this paper is to investigate how GS1 standards can be used to meet the requirements of the DPP for construction products.

To put this in context, it is useful to describe the timeline of the development of the DPP proposed by the European Union (EU) and the proposal for a Construction Products Regulation (CPR) with the aim of reducing greenhouse gas emissions. This will be done in the context of ISO standards created to improve traceability, data sharing and safety for construction products in the EU using BIM processes. This paper is based on the ESPR Commission proposal, which may be modified as it goes through the legislative process. The final publication in the Official Journal of the EU is expected by March 2024.

The methodology of this paper is problem-solving research based on a desk study, where on one side it examines the requirements of the DPP and ISO BIM standards, and on the other explains how GS1 Standards would fit as a possible solution to enable the digital transformation which is essential to meet these requirements.

Conclusion and recommendations appear at the end of the paper. References and an appendix are also included.

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>2.5 million

Developing standards for over 2.5 million companies worldwide

150 countries

25 industries served across 150 countries

>6 billion

Barcodes scans per day globally

116 MOs

Present in 116 countries (Member Organisations)

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DPP and the Adoption of GS1 Standards for Identification

Retail

Healthcare

Construction

Foodservice

Transport & Logistics

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CPG/Grocery

Apparel

Fresh Foods

General Merchandise

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ISO/IEC Compliance

GS1 Standards are based on ISO/IEC standards

GS1 Standards and their ISO/IEC basis	
GS1 Standard	ISO/IEC Standard
GTIN (Global Trade Item Number)	ISO/IEC 15459-6 & ISO/IEC 6523
GLN (Global Location Number)	ISO/IEC 6523
SSCC (Serial Shipping Container Code)	ISO/IEC 15459-1 & ISO/IEC 6523
GIAI (Global Individual Asset Identifier)	ISO/IEC 15459-4 & 5 ISO/IEC 6523
GSRN (Global Service Relationship Number)	ISO/IEC 15418
EAN/UPC barcode	ISO/IEC 15420
GS1 Data Matrix	ISO/IEC 16022
GS1 QR Code	ISO/IEC 18004
EPC Tag Data Standard	ISO/IEC 15962

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GS1 Keys along a Supply Chain

These are the main steps:

- **Identify:** GS1 Standards for Identification

- **Capture:** GS1 Standards for Barcodes and EPC/RFID

- **Share:** GS1 Standards for Data Exchange and Interoperability

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The Digital Product Passport (DPP) Is part of the Revised Construction Products Regulation (CPR)

Fig. 1: Timeline of the development of the DPP and CPR

ESPR, Article 8

CHAPTER III - DIGITAL PRODUCT PASSPORT

Article 8
Product passport

1. The information requirements referred to in Article 7(1) shall provide that products can only be placed on the market or put into service if a product passport is available in accordance with the applicable delegated act adopted pursuant to Article 4 and Articles 9 and 10.

2. The requirements related to the product passport laid down in the delegated acts adopted pursuant to Article 4 shall, as appropriate for the product groups covered, specify the following:

    (a)   the information to be included in the product passport pursuant to Annex III;

Article 4: *Empowerments to adopt delegated act*

Article 9: *General requirements for the product passport*

Article 10: *Technical design and operation of the product passport*

Annex III: *Digital Product Passport (referred to in Article 8)*

EUROPEAN COMMISSION

Brussels, 30.3.2022
COM(2022) 142 final

2022/0095 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

establishing a framework for setting ecodesign requirements for sustainable products
and repealing Directive 2009/125/EC

(Text with EEA relevance)

{SEC(2022) 165 final} - {SWD(2022) 81 final} - {SWD(2022) 82 final} -
{SWD(2022) 83 final}

EN   EN

ESPR, Article 9

Article 9
General requirements for the product passport

1. A product passport shall meet the following conditions:

    (a) it shall be connected through a data carrier to a unique product identifier;

    (b) the data carrier shall be physically present on the product, its packaging or on documentation accompanying the product, as specified in the applicable delegated act adopted pursuant to Article 4;

    (c) the data carrier and the unique product identifier shall comply with standard ('ISO/IEC') 15459:2015;

    (d) all information included in the product passport shall be based on open, standards, developed with an inter-operable format and shall be machine-readable, structured, and searchable, in accordance with the essential requirements set out in Article 10;

    (e) the information included in the product passport shall refer to the product model, batch, or item as specified in the delegated act adopted pursuant to Article 4;

GS1's Solutions

The Global Trade Item Number (GTIN) meets all these requirements

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EN   EN

ESPR, Article 12

> *Article 12*
> *Product passport registry*
>
> 1. The Commission shall set up and maintain a registry storing information included in the product passports required by delegated acts adopted pursuant to Article 4.
>
> The registry referred to in the first subparagraph shall at least include a list of the data carriers and unique product identifiers referred to in Article 9(1).

GS1's Solutions

GS1 GTINs are already used in many registries such as Barcode Manager/Activate, GS1 Registry Platform, and national and regional registries, and in the Product Information Management and Enterprise Resource Management Systems of individual companies.

EUROPEAN COMMISSION

Brussels, 30.3.2022
COM(2022) 142 final

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EN   EN

ESPR, Sec. of Annex III

ANNEX III

Digital Product Passport

(referred to in Article 8)

The requirements related to the product passport laid down in the delegated acts adopted pursuant to Article 4 shall specify what information shall or may be included in the product passport from among the following elements:

(b)   the unique product identifier at the level indicated in the applicable delegated act adopted pursuant to Article 4;

(c)   the Global Trade Identification Number as provided for in standard ISO/IEC 15459-6 or equivalent of products or their parts;

(g)   information related to the manufacturer, such as its unique operator identifier and the information referred to in Article 21(7);

(h)   unique operator identifiers other than that of the manufacturer;

(i)   unique facility identifiers;

(k)   the name, contact details and unique operator identifier code of the economic operator established in the Union responsible for carrying out the tasks set out in Article 4 of Regulation (EU) 2019/1020, or Article 15 of Regulation (EU) [.../...] on general product safety, or similar tasks pursuant to other EU legislation applicable to the product.

GS1's Solutions

GS1 meets all these requirements

EUROPEAN COMMISSION

Brussels, 30.3.2022
COM(2022) 142 final

ANNEXES 1 to 8

ANNEXES

to the

Commission proposal for a

Regulation of the European Parliament and of the Council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC

{SEC(2022) 165 final} - {SWD(2022) 81 final} - {SWD(2022) 82 final} - {SWD(2022) 83 final}

EN   EN

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Brussels, 30.3.2022
COM(2022) 144 final

2022/0094 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

laying down harmonised conditions for the marketing of construction products,
amending Regulation (EU) 2019/1020 and repealing Regulation (EU) 305/2011

(Text with EEA relevance)

{SEC(2022) 167 final} - {SWD(2022) 87 final} - {SWD(2022) 88 final} -
{SWD(2022) 89 final}

EN   EN
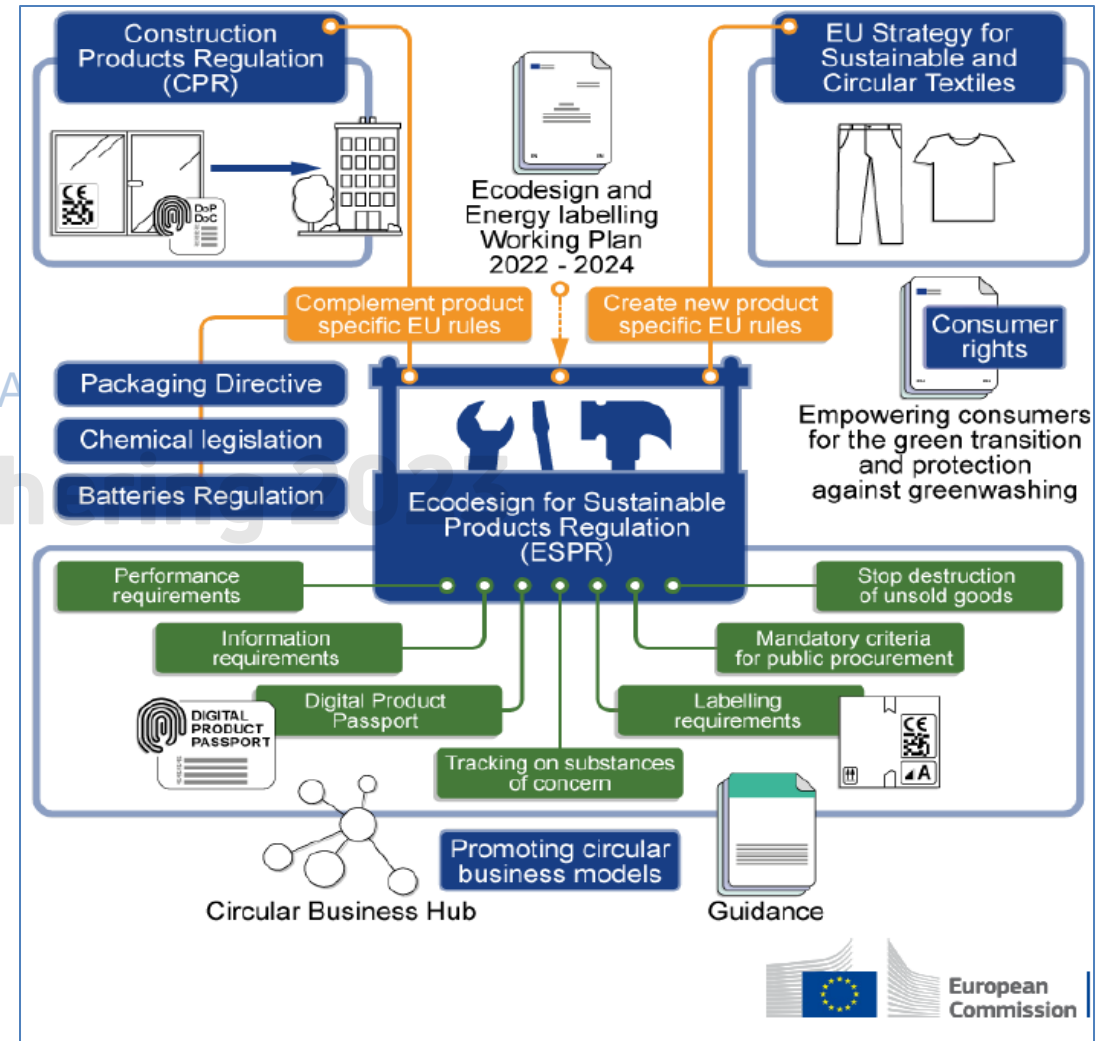
CPR

- Provides technical specifications for a common language on how to test and communicate the performance of construction products

- The latest amendments adopted by the EU Parliament (July 2023) explicitly require the use of Digital Product Passports

- CPR is expected to come into force in Q2 2024

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Role of the ESPR

The EU strategies and regulations related to Construction product identification are interrelated.

The ESPR functions as 'safety net' in cases where sectoral legislation does not sufficiently address environmental sustainability goals.

For example, where a regulation does not specify the use of the DPP, it needs to be provided in order to conform with the ESPR

Construction Products Regulation (CPR)

Ecodesign and Energy labelling Working Plan 2022 - 2024

EU Strategy for Sustainable and Circular Textiles

Complement product specific EU rules

Create new product specific EU rules

Consumer rights

Packaging Directive

Chemical legislation

Batteries Regulation

Ecodesign for Sustainable Products Regulation (ESPR)

Empowering consumers for the green transition and protection against greenwashing

Performance requirements

Stop destruction of unsold goods

Information requirements

Mandatory criteria for public procurement

DIGITAL PRODUCT PASSPORT

Digital Product Passport

Tracking on substances of concern

Labelling requirements

Promoting circular business models

Circular Business Hub

Guidance

European Commission

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Stockholm 2021-11-22

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Johan Lindqvist
Head of Purchasing

≡PEAB≡
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CPO & Group Purchasing Manager

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Infrastructure Swe*

SKANSKA
Anna Säfwenberg
*Head of Purchasin
Skanska Sverige*

byggmaterial industrierna
Anna Ryberg Ågren
CEO

Byggmaterialhandlarna
Monica Björk
CEO

To meet future need
digitalised construc
follows the entire pr

We are a collaborativ
demand the introduc
standardized identifi

GTIN FOR CONSTRUCTION PRODUCTS BEFORE 2022-07-01

We, national construction contractors, together with industry organizations in the building trade, building materials manufacturers and civil infrastructure, demand that GTIN*, as a common identifier of construction products, be introduced by the end of the first half of 2022.

With this decision, we enable both traceability in the construction process and that unique data can be linked to each product in the digital information flow.

In order to succeed with the introduction of GTIN, it is important that all stakeholders in the industry help, take initiatives, and work actively so that:

- GTIN will be able to be used operationally in business relations and internal processes
- manufacturers and suppliers always have GTIN on their construction products and follow the GTIN Management Rules, and connect product information and data to the GTIN.
- assessment and certification companies, and other database owners for product information, have GTIN as a mandatory, quality-assured information and identifier
- business and IT systems can handle and communicate GTIN

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"Datahub uses GS1 standards for global uniqueness of accounting points and interoperability"

"Statsbygg has set a requirement that all products included in a building/delivery must be identified with a GTIN"

Conclusions

- The legislation is coming

  - Some will start in 2024 – time to get ready

  - Don't wait for the "Green Harp"

  - Alert your suppliers and customers

- It requires ISO-compliant, open, interoperable identifiers and carriers (barcodes, RFID)

- GS1 standards meet that criteria

- Will affect the whole value chain from sourcing raw materials through recycling

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THANK YOU